



King County

Business Case for the King County Health Reform Initiative

2005 Budget Proviso

Of this appropriation, \$200,000 shall not be expended or encumbered until after the council reviews and approves by motion a business case for the disease management, case management and health promotion programs. The disease management case shall include cost-benefits analysis and performance measures for each program and a description of their impacts on the flexible benefits rate. The business case for the disease management programs shall also include performance guarantees for the disease management vendors.

The business case shall be transmitted by motion by April 1, 2005. The business case and motion must be filed in the form of 15 copies with the clerk of the council, who will retain the original and will forward copies to each councilmember and to the least staff for the labor, operations and technology committee or its successor

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Executive Summary

King County, like employers nationally, regionally and locally, is facing continued double-digit increase in health care costs for the foreseeable future. The county's benefits costs are expected to grow from \$144 million in 2005 to \$219 million in 2009. Past efforts at health care cost containment have been focused almost exclusively on controlling the "supply side" by limiting access to providers through managed care, contracting with providers for reduced fees, and after-the-fact utilization review. These approaches by themselves have not stemmed the cost trend.

There is increasing realization that to achieve more effective cost containment, employers like the county need to focus on reducing the "demand side" of health care. This concept was discussed in both the first and second reports of the Health Advisory Task Force that were reviewed and approved by the Council in 2004.

Strategies for reducing demand include moving employees and family members with higher risks to lower risk, keeping people with lower risk healthy, and teaching consumers how to make more effective health care choices. The expectation that prevention and disease management will result in overall cost savings for employers stems directly from evidence that many leading causes of disability and premature death in the U.S. are potentially avoidable or controllable, including most injuries, and many serious and acute chronic conditions.

An analysis of the county's health care utilization conducted in July, 2004 by Mercer Human Resources Consulting shows that 5 percent of members in the KingCare plan had health conditions that accounted for 58 percent of the total costs in the plan, and 20 percent accounted for 83 percent of all costs. The report found that cancers and heart disease were leading diagnoses among members with the most expensive claims, while low back pain, reported depression, asthma and diabetes caused the highest number of claims for the rest of the population. The report also predicted that high stress, high body mass index, tobacco use and high blood pressure are prevalent in the county population and are significant contributors to future chronic disease and cost. The Centers for Disease Control has estimated that 50% of risk for conditions like those found in the King County population is related to lifestyle and health behavior. As a result of these findings, Mercer recommended that the county implement the following programs to control its overall health care costs and improve the health and productivity of its employees:

- Case management
- Disease prevention/early detection programs
- Chronic disease management programs for asthma, diabetes, coronary artery disease, chronic heart failure, depression and low back pain
- Nurse advice line and patient access to health/health care information databases
- Provider best practices (target providers to improve efficiency and quality of service)
- Health risk assessment
- Targeted health behavior change

Based on the results of the health and productivity report, the county's Health Initiative Policy Committee, comprised of senior members of the executive's office and key department directors, developed a set of policy directions to be used in designing and negotiating the benefit plans with the Joint Labor Management Insurance Committee (JLMIC)¹. Two key directives were:

- Improve the health of county employees and their families;
- Reduce the rate of growth of medical plan costs by one-third (this equates to \$ 40 million for the 2007 – 2009 benefit plan years);

To those ends, the county and the JLMIC have negotiated 1) pilot programs for disease management, expanded case management, nurse advice line, provider best practice care considerations, and high performance specialist network in 2005 – 2006, and 2) an expanded range of program offerings in 2007 – 2009 benefits package that also include individual health risk assessments and targeted follow up health behavior change programs.

Cost-benefit of the programs

Mercer has projected the five-year return –on-investment (ROI) for each of the programs will be as follows²:

- Case management (telephone outreach to members needing hospital or other specialized care) – 2.0 to 3.0
- Disease management (provides ongoing support and education to members with specific chronic conditions) – 2.0 to 3.0
- Nurse advice line (provides current, reliable information on health-related issues 24-hours a day)– 2.0 to 3.0
- High performance network (identifies the most efficient physicians in defined specialty practices)-- 0.39% reduction in costs in 2005 – 2007 and a 0.44% reduction in 2008 – 2009
- Provider best practice (provides evidence-based treatment information to providers) – savings of \$3 per member per month in 2005 increasing to \$6 per member per month in 2009
- Health risk assessment and targeted behavior change – 2.0 to 3.0

Impact on flex rate

The chart below summarizes the net effect on the flex rate for each of the programs during 2007 – 2009:

¹ Because the county is highly unionized (87%) and has 97 separate bargaining units, benefits are bargained in coalition in three-year cycles through the Joint Labor Management Insurance Committee.

² In 2005 – 2006 the county is purchasing these services from Aetna. The specific programs purchased are Enhanced Member Outreach (case management), disease management, Informed Health Line (nurse advice line), Aexcel (high performance network), and MedQuery (provider best practice.)

Financial Impact Summary

	Targeted Flex Rate Reduction (PEPM)*	Savings from Initial Five Programs**	Health Risk Assessment & Health Behavior Change	Remaining Gap***
2005	\$0.00	\$8.00	\$0.00	(\$8.00)
2006	\$0.00	\$12.00	\$0.00	(\$12.00)
2007	\$40.00	\$19.00	\$25.00	(\$4.00)
2008	\$87.00	\$25.00	\$40.00	\$22.00
2009	\$144.00	\$33.00	\$60.00	\$51.00
Aggregate Annual Total (rounded)	\$40,000,000	\$14,300,000	\$18,500,000	\$7,200,000

* Per employee per month; annual amounts equal PEMP x 12 x 12,300 employees

** Enhanced case management, disease management, nurse advice line, MedQuery, and Aexcel network; savings will begin accruing in the 2005 and 2006 pilots.

***The county and the JLMIC are still in negotiations to determine how to best address the final \$7.2 million

Table 1

Performance measurement

The county is in the process of developing a research design for measuring and tracking the contribution of each program towards the county's overall goals of lower cost increases and better employee health. Measurement and reporting can be broken down into three areas—on-going reporting of participation in specific programs, outcomes analysis for each specific program, and surveying of the effectiveness of the communication, education and health promotion activities in motivating participation in the various programs. The county's goal is to have a set of measurements that work both for the pilot programs in 2005 – 2006 and for programs and vendors selected for the 2007 – 2009 benefits package. A final decision on the measurement system is expected by the end of the second quarter, 2005.

On-going reporting tracks program progress based on a synthesis of summary vendor reporting (monthly, quarterly, and/or annual reporting frequencies). It produces a high-level look at results. Measurement metrics include utilization, participation, satisfaction with the programs, risk scores/stratification, and others.

If, however, the county wants to develop a more complete picture of which programs are truly contributing to better health and/or lowering the health care cost trend, then it must pursue an outcomes analysis approach. Outcome analysis focuses on program impact and return-on-investment (ROI) at the individual level, and thus can control for double-counting associated with data from health management program vendors. Outcomes analysis integrates all data in order to tie participation to claims costs for participants and non-participants, thus more clearly showing which programs are most instrumental in affecting utilization of health services. It requires individual level data that links participation with

key outcomes, adjusting for demographic differences. It uses multivariate statistical analysis to determine the unique contribution of program participation by controlling for other factors such as age, gender, health plan, and tenure. An outcomes-oriented analysis methodology will require that the county to set up an integrated data warehouse. Options are being explored for accomplishing this in a way that ensures compliance with the Health Information Portability and Accountability Act (HIPAA) on individual protected health information while providing flexibility for the focus of analysis to change over time.

Finally, the county will set up a series of surveys at critical points in the communication, education and health promotion activity plans to determine how well employees and their spouses/domestic partners know and understand the message at that point, whether they believe the message, and whether they follow up on the message by participating in healthy behaviors and programs. The specific measurement points and survey methodology are still in development at the time of this writing.

Performance guarantees for disease management

Aetna has guaranteed a 10% reduction in acute inpatient bed days for participants in the disease management program during the 2005—2006 pilot. If Aetna does not meet the guarantee, the program fees will be refunded on a sliding scale basis (e.g. <2% reduction = 100% of fees refunded, 2%-5% reduction = 75% of fees refunded, etc.)

Performance guarantees will be included in the request for proposals for vendors for the 2007-2009 benefits plans.

Caveats for success

As noted in the HAT Force reports adopted by Council Motions 11890 and 12023, there are three components critical to the success of the *Healthy Incentives* approach beyond the actual programs. These are 1) building a strong organizational alignment with health promotion in the workplace, 2) developing and sustaining an active, well-executed communication program aimed at both employees and their spouses/domestic partners, and 3) implementing a user-friendly web portal for delivering health education and tools to the home and simplifying enrollment in programs and benefits. These three components must be in place in order for the county to realize the ROI and ultimate health care cost containment it is seeking.

- The county is now in the process of developing a comprehensive health promotion strategy that starts with senior management commitment to employee health as an asset to business success, and reaches out to every employee. The goal of the health promotion strategy is to support and reinforce employee efforts to develop and maintain healthy behaviors.^{3 4 5} It also means supporting

³ Chapman, L., (2002) *Planning Wellness: Getting Off to a Good Start*, Summex Corporation, Seattle, WA, p. 153.

employees who are working on their targeted health behavior changes by sponsoring activities are consistent with this behavior change. This could include things like providing healthier snacks in vending machines, allowing weight management meetings such as “Weight Watchers” in county worksites, creating maps of walking routes near county facilities, sponsoring noontime or before/after work walking clubs, and offering smoking cessation classes. Major employers including GE, Johnson & Johnson, Volkswagen AG, Pitney Bowes and Caterpillar have all added strong work place-based health promotion to their health care cost containment efforts.

- The council recognized the need for a comprehensive communication/education program when it approved the Benefits Labor-Management Collaboration project in the 2004 and 2005 budgets. That project is slated to run through 2007.
- The Benefit Health Information Project (BHIP) business case outlines in detail a strategy for developing a web portal and enrollment system that will competently support the county’s new benefits programs for plan years 2007-2009.

⁴ Goetzel, R.Z., Guindon, A., Humphries, L., Newton, P., Turshen, J., and Webb, R., *Health and Productivity Management: Consortium Benchmarking Study Best Practice Report*, American Productivity and Quality Center International Benchmarking Clearinghouse, Houston, TX, July, 1998 available through www.apqc.org

⁵ Lowe, G, PhD, *Healthy Workplace Strategies: Creating Change and Achieving Results*, Workplace Health Strategies Bureau, Health Canada, p. 11

Background

King County is facing an urgent need to effectively contain the rise in employee health care costs. The County's benefits budget is expected to increase at a rate of 11% or more per year for at least five more years⁶. That is an increase in spending from the current level \$144 million in 2005 to \$219 million in 2009. The county is not alone in this experience--double digit inflation in health care costs has plagued employers locally, regionally and nationally for a half dozen years and industry projections indicate the general trend will continue. This level of increase is unsupportable in the long term and will result in a financial crisis for the county.

Health Advisory Task Force

In December 2003, King County Executive Ron Sims convened a broad-based leadership group, the King County Health Advisory Task Force (HAT Force), to develop an integrated short- and long-term strategy to address systemic problems facing the health care cost, quality and delivery in the Puget Sound region. The HAT Force produced two reports that were reviewed by the Council and adopted in Motions 11890 and 12023. The report adopted by motion 12023 dealt with regional strategies. However, that report also included a lengthy discussion of implementing workplace-based health promotion and disease management programs in Appendix B. The report adopted by Motion 11890 dealt with the county's internal strategies for managing employee health benefits. In summary, the HAT Force recommended that the county focus on reducing the "demand side" of health care by moving employees and family members with higher risks to lower risk, keeping those with lower risk healthy, and teaching consumers how to make more effective health care choices. Key action steps suggested by the HAT Force reports included:

- Use employee surveys and focus groups to determine the most relevant and effective communication programs for employees and their families;
- Conduct an analysis of its health care utilization data to determine areas of intervention that will have the greatest effect on health care costs; and
- Create benefit designs that motivate employees and their families to choose identified quality providers, actively participate with their providers in their own health care, participate in wellness and prevention activities, and manage chronic health conditions.

The county has acted on all three of the HAT Force action recommendations related to King County benefits.

⁶ Mercer Human Resources consulting actuary report, September, 2004. This report takes into consideration national and local conditions that show a slight moderation in trend (11% vs 15%) from projection in the 2000—2003 time period.

Employee Survey and Focus Groups

First, the county conducted an employee survey and focus groups in the spring of 2004 to determine the current level of understanding, attitudes, and readiness for change related to 1) the health care crisis, 2) issues around choosing health care plans, 3) using health care services and 4) managing personal health care. Response from employees was significant, with over 37 percent responding to the survey, and more than 115 in total employees participating in the 15 focus groups. (Employee surveys are considered by researchers to be valid with an 18 percent return, and highly successful with a 25 percent return.) One of the strongest themes that emerged from the survey was employees' desire for website access for employees and family members that would assist them (among other things) to learn about general health issues, decide on plans that best fit their needs, obtain information on quality providers and enroll in their benefits. Employees also indicated very strong interest in having access to nurse advice lines and on-line health information databases, and in participating in disease management programs.

An equally important theme expressed in the survey and focus groups was employee's concerns that their personal health information must be kept absolutely confidential in accordance with HIPAA (Health Information Portability and Accountability Act) and not be released directly to the county.

Health and Productivity Analysis

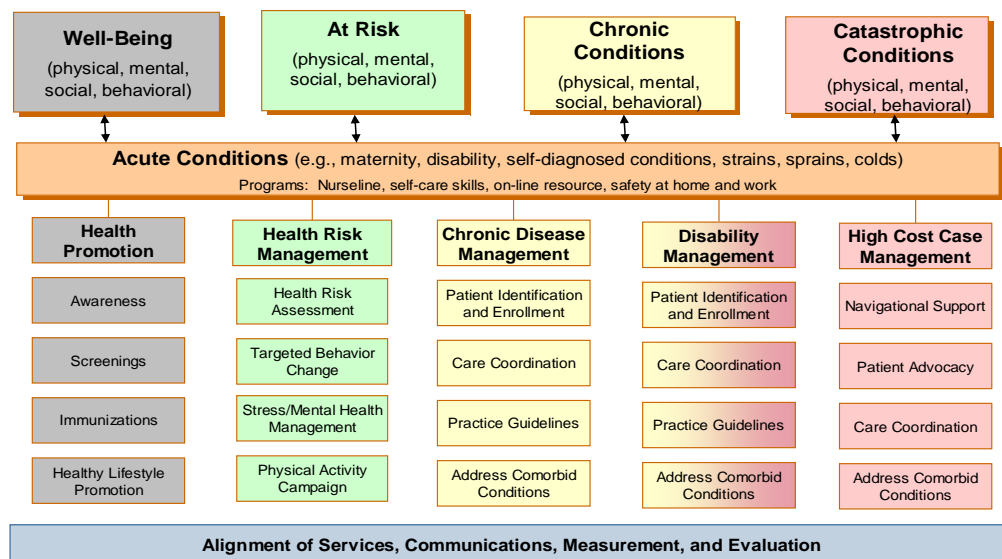
Second, in July, 2004, the county asked Mercer Human Resources Consulting to 1) conduct a detailed health and productivity analysis on the county's actual health care utilization in both the KingCare and Group Health plans and, 2) develop predictive modeling to determine programs that will contribute to significant reduction in the rate of health care cost growth and show a good return on investment. The analysis showed that 5 percent of members in the KingCare plan had health conditions that accounted for 58 percent of the total costs in the plan, and 20 percent accounted for 83 percent of all costs, with very similar results for the Group Health population. The report found that cancers and heart disease were leading diagnoses among members with the most expensive claims, while low back pain, reported depression, asthma and diabetes caused the highest number of claims for the rest of the population. The report also predicted that high stress, high body mass index, tobacco use and high blood pressure are prevalent in the county population and are significant contributors to future chronic disease and cost. As a result of these findings, Mercer recommended that the county implement the following programs to control its overall health care costs and improve the health and productivity of its employees:

- Case management (telephone outreach to members needing hospital or other specialized care)
- Disease prevention/early detection programs (disease-specific screening, clinically developed models that predict when and how risk factors are most likely to become a full-blown chronic condition)

- Chronic disease management programs for asthma, diabetes, coronary artery disease, chronic heart failure, depression and low back pain
- Nurse advice line and patient access to health/health care information databases
- Provider best practices (target providers to improve efficiency and quality of service)
- Health risk assessment (tool used to determine an individual's specific risk of developing chronic disease and the individual's readiness to make lifestyle changes that reduce that level of risk)
- Targeted health behavior change (individually tailored messaging to provide specific next steps to individuals seeking to make lifestyle changes as a result of a health risk assessment)

Table 1 illustrates interventions Mercer recommends for addressing health issues across the entire health care continuum for people at no or little risk to people experiencing catastrophic conditions. The table shows the various levels of “health” and the interventions which are most appropriate and effective for each. The solid bar near the top labeled “Acute Conditions” shows how programs such as the nurse line are a useful tool for people at all levels of risk in deciding where to go for the right care in the right setting when they experience symptoms. The solid bar at the bottom of the table shows the importance of supporting these programs with a strong foundation of communication, measurement and evaluation.

Strategies for Addressing Health Across the Care Continuum



Mercer Human Resource Consulting

Table 2

Health Initiative Policy Direction

Third, the county's Health Initiative Policy Committee, comprised of senior members of the executive's office and key department directors, developed a set of policy directions to be used in designing and negotiating the benefit plans with the Joint Labor Management Insurance Committee (JLMIC)⁷. These policy directions, which take into consideration the HAT Force recommendations, all of the research and recommendations from the original internal benefits committee⁸, the employee surveys, and the health and productivity analysis, include:

- Improve the health of county employees and their families;
- Reduce the rate of growth of medical plan costs by one-third (this equates to approximately \$40 million for the 2007 – 2009 benefit plan years);
- Avoid county-mandated premium share⁹;
- Allow flexibility to address emerging innovation in either vendor or community-based programs;
- Be consistent with all HAT Force recommendations; and
- Be administratively feasible.

⁷ Because the county is highly unionized (87%) and has 97 separate bargaining units, benefits are bargained in coalition in three-year cycles through the Joint Labor Management Insurance Committee.

⁸ Early in 2003, a group consisting of benefits experts from inside county government was assembled to determine how King County could achieve real, significant and lasting cost containment through both short-term savings and long-term reform in its own system. This internal team conducted a focused research effort to seek best practice approaches from research institutes as well as actual applications.

⁹ A 2003 study conducted by the Washington Business Group on Health (now called the National Business Group on Health) and Watson Wyatt determined that employers who were significantly more successful in controlling health care cost increases emphasize cost sharing with employees through copays and point-of-services mechanisms rather than through increased premium share. See Watson Wyatt, "Creating a Sustainable Health Care Program: Eighth Annual Washington Business Group on Health/Watson Wyatt Survey Report" 2003. Highlights of results:

2007 – 2009 Healthy Incentives Program

Program Design

The county and the JLMIC negotiate benefits packages on a three-year cycle. The current benefit plan was scheduled to run 2003 through 2005. During negotiations in 2004, it became apparent to both labor and management that crafting a new benefits package that would more successfully address the rise cost of health care would require more thought and preparation than could be accomplished by January of 2006. Therefore the county and the JLMIC reached an agreement to extend the current benefit package through December 31, 2006. As part of the agreement, the county and JLMIC pledged to seek ways to provide employees with additional tools and resources necessary to better manage their benefits and healthcare choices. As these benefit enhancements are identified, refined and agreed upon they may be implemented or added to the current package at any time. In addition the county and JLMIC continued to actively work toward the development of a new multi-year benefit agreement to become effective January 1, 2007, focused on improving the quality of care for employees and stabilizing the costs of healthcare benefits. As a result, the county and the JLMIC have now negotiated a five-year strategy to reduce health care demand.

The first step in the strategy is to implement pilot programs for disease management, enhanced case management and a high performance specialist network in 2005 – 2006. The second step is to continue these three types of programs and add individual health risk assessments and targeted health behavior change programs in the 2007 – 2009 benefits package. This approach to managing health care costs has been titled the *Healthy Incentives* program. The goal of the *Healthy Incentives* program is to help healthy members stay healthy and keep members with chronic conditions from moving into catastrophic claims. The *Healthy Incentives* framework is forecast to achieve the one-third reduction in trend over the 2007 – 2009 benefits period.

The *Healthy Incentives* program offers a PPO and an HMO plan, each with three variations. ***All three variations in each plan cover the same services and benefits***, however the three variations have three different levels of out-of-pocket expenses for employees. These variations are referred to in short hand as the “bronze”, “silver” and “gold” out-of-pocket levels. The bronze level has the highest deductibles, coinsurance and copays; gold has the lowest. Silver is halfway in between gold and bronze. Employees and their spouses/domestic partners who participate in the health risk assessment and follow up programs will earn points that make them eligible for the silver and gold levels. The more actions the adult members of a family take to build good health habits, the more points they earn. Participation is strictly voluntary; however employees and spouse/partners who do not participate in the health risk assessment will automatically earn the bronze out-of-pocket level. There will be a set number of points needed to earn the silver level, and a higher number of points needed for the gold level. (Specific details are still in negotiation at the time of this writing.)

The health risk assessment and other programs will be offered through third party vendors who will protect the confidentiality of each member’s personal health information as required

under HIPAA. No individual health information will be sent to the county, only the number of points earned for participation.

The higher the participation in the *Healthy Incentives* program, the more likely that employees and their spouses/domestic partners will change to more healthy behaviors, and these more healthy behaviors will in turn prevent lower risk problems from becoming catastrophic (*e.g.* high blood pressure does not become a stroke; high cholesterol does not become a heart attack; poor eating habits do not become high body mass index that brings on a whole host of poor health conditions.) Mercer has estimated that the success of the *Healthy Incentives* program depends upon effectively motivating 60 percent of the adult members in the plan (employees and their spouses/domestic partners) to participate in the health risk assessments each year. This level of participation is needed to ensure that at least 10 percent of “at risk” adult members adopt more healthy behaviors. In turn, this level of catastrophic claim avoidance, along with effective management of severe claims that do occur, will create the reductions in projected trends, saving money for both the county and its employees.

Program Assumptions¹⁰

In developing the cost and savings estimates for the *Healthy Incentives* program, certain assumptions were made in three areas:

- Trend—the rates of growth in the county benefits programs and reduction in future trends as a result of a reduction in risk and improvement in healthy behaviors;
- Participation—the number of employees and spouses/domestic partners who would engage in the health risk assessment and follow-up programs to support health behavior change; and
- Return on investment (ROI) for each program component.

Trend Assumptions

Baseline

Baseline cost projections were calculated using assumed rates by line of coverage as noted below. Current county-specific trends and Mercer benchmarks are included for reference. The overall weighted average trend rate for the county's program is approximately 11% projected 2005 through 2009.

Trend Assumptions

Line of Coverage	Assumption	Actual County-Specific	Mercer Benchmark
KingCare medical claims	12%	9% - 12%	10% - 17%
KingCare Rx claims	16%	14% - 17%	11% - 17%
WDS Dental claims	5%	4% - 7%	5% - 9%
VSP vision claims	3%	3% - 5%	3% - 5%
ASO fees*	3%	n/a	n/a
Insured HMO premiums **	13%	n/a	n/a
Life/AD&D/Disability premiums	3%	n/a	n/a
Salaries***	3%	n/a	n/a
Internal administration & professional services	5%	n/a	n/a

* Administrative services only – the fees the county pays to third party administrators for adjudication of claims in the self-insured plans (KingCare, dental and vision)

** Group Health is the county's only insured HMO plan

*** For internal King County staff who handle the benefits programs

Table 3

¹⁰ *Healthy Incentive* program assumptions and calculations of ROI were developed for the county by Mercer Human Resources Consulting.

Target trend reduction

Using the trends detailed above, Mercer calculated the projected benefits flex rate year by year and the targeted savings. The targeted savings were based on the stated goal of reducing the rate of increase by one-third beginning in 2007 through 2009.

Targeted Trend Reduction

	Projected Flex Rate	Percent Change	Targeted Percent Reduction	Targeted Percent Change	Targeted Flex Rate	Targeted Flex Rate Reduction**
2005	\$980.00*	3.0%	n/a	n/a	\$980.00	\$0.00
2006	\$1,086.00	10.8%	n/a	n/a	\$1,086.00	\$0.00
2007	\$1,205.00	10/9%	3.6%	7.3%	\$1,165.00	\$40.00
2008	\$1,338.00	11.1%	3.7%	7.4%	\$1,251.00	\$87.00
2009	\$1,488.00	11.2%	3.7%	7.5%	\$1,344.00	\$144.00
Aggregate Annual Total (rounded to the nearest million)					\$40,000,000	

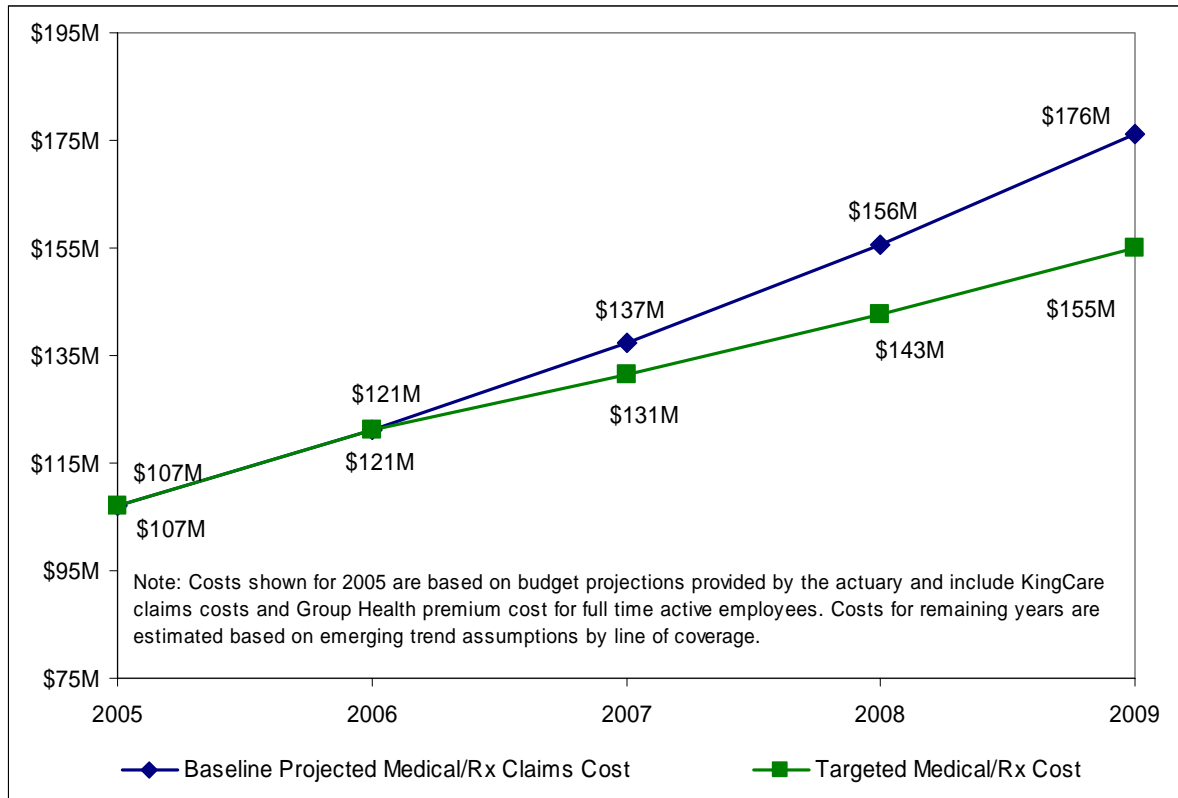
* The calculation for the 2005 flex rate was made well before the actual flex rate was adopted in the 2005 budget. One of the caveats articulated when this model was built and became the basis of negotiating the 2007 – 2009 benefits package is that the **actual** flex rate will be different from this model each year. Sometimes it will be lower, sometimes it will be higher. The county's actuary is still predicting that the county is experiencing an artificially "low" rate at the end of 2004 and beginning of 2005 that may last through this year, maybe even into next, but then there will be an accelerated increase after that. The actuary is still predicting an overall trend rate that will average approximately 11% over the five-year period. While the model will not be adjusted at this time, future analysis will identify the extent to which changes in the trend over time are attributable to program interventions.

** Introducing the disease management, case management, nurse line and high performance networks as pilots in 2005 and 2006 will generate some savings in those years. However, since the \$40 million target was based on the trend reduction in 2007 – 2009, those savings have been applied to the 2007 – 2009 period.

Table 4

The targeted trend reduction can also be expressed in terms of the specific effect of the *Healthy Incentives Program* will have on the medical and prescription drug costs anticipated over the next five years. Tables 5 and 6 illustrate the expected trend reduction for the medical and prescription costs.

Illustration of Medical/Rx Baseline and Target Costs



Baseline Projected Costs	2005	2006	2007	2008	2009
Medical Claims	\$88M	\$99M	\$112M	\$126M	\$142M
Rx Claims	\$19M	\$22M	\$26M	\$30M	\$35M
Total Medical Rx Claims	\$107M	\$121M	\$137M	\$156M	\$176M
Medical Admin	\$4M	\$4M	\$4M	\$4M	\$4M
Medical Total	\$111M	\$125M	\$142M	\$160M	\$180M
Dental	\$18M	\$19M	\$20M	\$21M	\$22M
Vision	\$3M	\$3M	\$3M	\$3M	\$3M
Life/AD&D	\$1M	\$1M	\$1M	\$1M	\$1M
LTD	\$3M	\$3M	\$3M	\$3M	\$3M
Subtotal	\$136M	\$151M	\$169M	\$188M	\$210M
Other County Adjustments ¹	\$9M	\$9M	\$9M	\$9M	\$10M
Total	\$145M	\$160M	\$178M	\$198M	\$220M

¹ Includes IBNR, County Administration, BHIP, Investment Income, etc.

Table 5

Medical/Rx Cost Savings Targets

	Projected Medical/Rx <u>Claims Cost</u>	Percent <u>Change</u>	Targeted Medical/Rx <u>Claims</u> <u>Cost</u>	Targeted Percent <u>Change</u>	Targeted Medical/Rx <u>Savings</u>
2005	\$107M	n/a	\$107M	n/a	\$0M
2006	\$121M	13.3%	\$121M	13.3%	\$0M
2007	\$137M	13.3%	\$131M	8.4%	\$6M
2008	\$156M	13.2%	\$143M	8.5%	\$13M
2009	\$176M	13.2%	\$155M	8.6%	\$21M
Total	\$697M		\$657M		\$40M

Notes:

- Projected claims cost includes KingCare medical and Rx claims and Group Health premium cost.
- Projections assume trends of 12% for medical claims, 16% for Rx claims, and 13% for Group Health premium.
- 2006 initial cost projections assume trends of 10% for medical, 15% for Rx, and 13% for Group Health.
- Lower trends assumed for 2006 reflect a recent trend abatement in this market; we do not necessarily expect this abatement to continue through 2009.

Table 6

Participation Assumptions

Under the *Healthy Incentives Program*, plan enrollment will be driven by the points accumulated by employees and their spouses/domestic partners. Mercer assumes that 60% of employees and their spouses/domestic partners would complete the health risk assessment. This assumption is based on level of participation achieved by other employers undertaking similar program approaches (*e.g.* meaningful incentives for participation, consistent and on-going communication support, executive-level buy-in and support, *etc.*)

Table 7 below shows what percent of the employees will be eligible for the new plan options in 2007 based on projected participation in the health risk assessment and follow up actions. The chart assumes that current KingCare members are likely to choose the KingCare versions of the new plan, while Group Health members will choose the HMO versions. The proportion of employees choosing Group Health has held steady at 20 percent for more than 20 years. The employees who currently choose the KingCare Basic plan will probably opt for the bronze level; employees most often choose the KingCare Basic plan in the year they anticipate they will retire or terminate employment so that they will have the lowest cost plan available to them when they enroll in either the COBRA or the retiree medical plan.

Participation Distribution

Current Plan	Number of Employees	Assumed Participation Distribution in Out-of-Pocket Levels		
		Gold	Silver	Bronze
KingCare Preferred Plan	9,557	60%	10%	30%
KingCare Basic Plan	94	0%	0%	100%
Group Health Cooperative HMO Plan	2,345	60%	10%	30%

Table 7

Return on Investment Assumptions

The following tables show the ROI assumptions for each program element with the rationale used in their development. Mercer used data from their extensive experience with these kinds of programs along with Aetna's estimates which were developed by modeling the county's data against the specific program design used by Aetna.¹¹ *Please note:* Using Aetna's assumptions does not in any way imply that they will be the vendor for any of the specific programs after 2006. The Aetna information is useful because it includes actual program charges and it incorporates actual King County data in the calculations.

Case Management (Enhanced Member Outreach)

Assumptions:

- Aetna estimates first year ROI at 2.0.
- Mercer's estimate of ROI from case management based on detailed analysis is in the range of 2.0 to 2.5.

ROI for Case Management

	Assumed Participation	Gross Savings	ROI Case Mgt.	Program Cost	Net Savings	Flex Rate Savings*
2005	n/a	\$270,000	1.5	\$180,000	\$90,000	\$1.00
2006	n/a	\$378,000	2.0	\$189,000	\$189,000	\$1.00
2007	n/a	\$496,125	2.5	\$198,450	\$297,675	\$2.00
2008	n/a	\$520,931	2.5	\$208,373	\$312,559	\$2.00
2009	n/a	\$546,978	2.5	\$218,791	\$328,187	\$2.00

Notes: Costs shown above are as proposed by Aetna effective January 1, 2005; Incentives are not necessary since this program is based on an out-opt feature with high participation.

* Monthly flex rate savings are calculated by dividing net savings by 12,300 (the number of covered employee assumed in all calculation in this paper) by 12. The flex rate savings is rounded to whole dollar amounts. Unrounded impacts in 2005 and 2006 are \$0.61 and \$1.28 respectively.)

Table 8

¹¹ Aetna is the vendor for the pilot programs offered in 2005 and 2006.

Disease Management

Assumptions:

- Aetna estimates first year ROI at 3.4 increasing to 4.1 in year three.
- Mercer's estimate of ROI from disease management based on detailed claims analysis is in the range of 2.0 to 3.4.
- Published literature shows disease management ROI ranging between 1.3 and 8.9.
- Mercer used somewhat conservative ROI assumption in comparison to Aetna and the published literature estimates due to the lack of standard measurement methodology in the market.

ROI for Disease Management

	Assumed Participation	Gross Savings	ROI Dis. Mgt.	Program Cost	Net Savings	Flex Rate Savings*
2005	n/a	\$410,400	2.0	\$205,200	\$205,200	\$1.00
2006	n/a	\$646,380	3.0	\$215,460	\$430,920	\$3.00
2007	n/a	\$769,192	3.4	\$226,233	\$542,959	\$4.00
2008	n/a	\$807,652	3.4	\$237,545	\$570,107	\$4.00
2009	n/a	\$848,034	3.4	\$249,422	\$598,613	\$4.00

Notes: Costs shown above are as proposed by Aetna effective January 1, 2005; Incentives are not necessary since this program is based on an out-opt feature with high participation.

* Flex rate savings are rounded to the nearest whole dollar.

Table 9

Nurse Advice Line (Informed Health Line)

Assumptions:

- Aetna estimates first year ROI at 2.0
- Mercer's estimate of ROI from nurse lines based on detailed claims analysis is in the ranges of 2.0 to 3.0
- Published literature shows median ROI for nurse lines (supported by communication and self-care resources) of 4.5

ROI for Nurse Line

	Assumed Participation	Gross Savings	ROI Nurse Line	Program Cost	Net Savings	Flex Rate Savings*
2005	n/a	\$154,400	2.0	\$77,200	\$77,200	\$1.00
2006	n/a	\$162,120	2.0	\$81,060	\$81,060	\$1.00
2007	n/a	\$170,226	2.0	\$85,113	\$85,113	\$1.00
2008	n/a	\$178,737	2.0	\$89,369	\$89,369	\$1.00
2009	n/a	\$187,674	2.0	\$93,837	\$93,837	\$1.00

Notes: Costs shown above are as proposed by Aetna effective January 1, 2005.

* Flex rate savings are rounded to the nearest whole dollar

Table 10

High Performance Specialty Network (Aexcel)

Assumptions:

- Aetna estimates first year claims cost reduction of 0.39% with Aexcel offered on a passive basis (e.g. no coinsurance incentives to utilize Aexcel providers.)
- Gross savings estimates below apply to the 0.39% reduction to projected cost estimates for 2005 – 2007, and a 0.44% reduction in 2008 and 2009.

ROI for High Performance Network

	Assumed Participation	Gross Savings	ROI Aexcel	Program Cost	Net Savings	Flex Rate Savings*
2005	75%	\$357,964	1.9	\$190,602	\$167,362	\$1.00
2006	75%	\$452,887	2.3	\$200,132	\$252,755	\$2.00
2007	75%	\$476,762	2.3	\$210,139	\$266,623	\$2.00
2008	75%	\$610,659	2.8	\$220,646	\$390,014	\$3.00
2009	75%	\$675,511	2.9	\$231,678	\$443,833	\$3.00

Notes: Costs shown above are as proposed by Aetna effective January 1, 2005; assumed use of specialists in the high performance network is projected at a fairly high rate based on the specialists who are in the 2005 Aexcel network—these are the specialist who currently are most often used by King County employees.

* Flex rate savings are rounded to the nearest whole dollar.

Table 11

Provider Best Practice (MedQuery)

Assumptions:

- Aetna estimates savings from MedQuery for employer-based populations at \$1 to \$6 per member per month (PMPM).
- ROI assumption below was set to generate approximately \$3 PMPM in 2005 increasing to \$6 in 2009.

ROI for Provider Best Practice

	Assumed Participation	Gross Savings	ROI MedQuery	Program Cost	Net Savings	Flex Rate Savings*
2005	n/a	\$768,000	4.0	\$192,000	\$576,000	\$4.00
2006	n/a	\$1,008,000	5.0	\$201,600	\$806,400	\$5.00
2007	n/a	\$1,375,920	6.5	\$211,680	\$1,164,240	\$8.00
2008	n/a	\$1,666,980	7.5	\$222,264	\$1,444,716	\$10.00
2009	n/a	\$1,750,329	7.5	\$233,377	\$1,516,952	\$10.00

Notes: Costs shown above are as proposed by Aetna effective January 1, 2005.

* Flex rate savings are rounded to the nearest whole dollar.

Table 12

Health Risk Assessment and Targeted Health Behavior Change

Assumptions:

- Mercer's estimate of ROI from the health risk assessment and targeted health behavior change programs based on detailed claims analysis is in the range of 2.0 to 3.0
- Published literature shows ROI for the Health Management Programs (including health risk assessments and targeted health behavior change) in the range of 3.0 to 5.0.

ROI for Health Management Programs

	Assumed Participation	Gross Savings	ROI Health Mgt. Prog.	Program Cost	Net Savings	Flex Rate Savings*
2005	n/a	n/a	n/a	n/a	n/a	n/a
2006	n/a	n/a	n/a	n/a	n/a	n/a
2007	60%	\$370,000	1.0	\$370,000	\$0	\$0.00
2008	60%	\$555,000	1.5	\$370,000	\$185,000	\$1.00
2009	60%	\$740,000	2.0	\$370,000	\$370,000	\$3.00

Notes: Costs shown above are estimates based on average program cost seen for other plan sponsors; Participation and savings assume the adoption of the *Healthy Incentives* model supported by consistent and ongoing communications and strong upper management leadership.

* Flex rate savings are rounded to the nearest whole dollar.

Table 13

Summary of Overall Trend Reductions

The following three tables show the net result of trend reduction, enrollment shifts and the aggregate impact of the five *Healthy Incentives* program savings at the total budget and flex rate levels.

Trend Reduction Assumptions

Mercer assumed incremental reductions in the annual cost trend for 2007 through 2009. These reductions were 1.00% in 2007, 1.50% in 2008, and 2.00% in 2009, resulting in projected KingCare plan increases of 11.5% in 2007, 11.1% in 2008, and 10.6% in 2009. The anticipated reduction in trend result from the reduction in the risk expected to be achieved from the combination of the health management program components and the county's health education campaign.

Trend Reduction Assumptions

	Net Savings from Trend Reduction	Flex Rate Savings (PEMP)*
2005	\$0	\$0.00
2006	\$0	\$0.00
2007	\$1,032,130	\$7.00
2008	\$2,888,260	\$20.00
2009	\$5,809,429	\$39.00

* Per employee per month, rounded to the nearest whole dollar.

Table 14

Enrollment Shift Savings

Although the county's primary aim in the *Healthy Incentives* program is to achieve a *permanent* trend reduction through participation in health improvement activities, the county will also see some short term savings from employees make choices that place them in the plans with higher employee out-of-pocket expenses. In essence, the bronze and silver levels shift more costs from the county and to employees, so the county pays a little less in claims than it would have paid if all employees were in the gold level. The amount of those short term savings is estimated in the table below.

Enrollment Shift Savings

	Net Savings from Enrollment Shift	Flex Rate Savings (PEPM)*
2005	\$0	\$0.00
2006	\$0	\$0.00
2007	\$2,907,828	\$20.00
2008	\$3,510,951	\$24.00
2009	\$4,517,320	\$31.00

* Per employee per month, rounded to the nearest whole dollar. Introducing the disease management, case management, nurse line and high performance networks as pilots in 2005 and 2006 will generate some savings in those years. However, since the \$40 million target was based on the trend reduction in 2007 – 2009, those savings have been applied to the 2007 – 2009 period.

Table 15

Financial Impact Summary

The table below provides the aggregate impact of all of the proposed programs combined. These programs are projected to cover \$32 million of the \$40 million targeted the reduction. The county and the JLMIC are currently still in negotiations to determine how best to address the final \$7.2 million. This \$7.2 million equates to an *average* of \$16 per employee per month of the flex rate each year for 2007 – 2009.

Financial Impact

	Targeted Flex Rate Reduction (PEPM)	Savings from Initial Five Programs*	Initial Gap	Health Risk Assessment & Health Behavior Change	Remaining Gap
2005	\$0.00	\$8.00	(\$8.00)	\$0.00	(\$8.00)
2006	\$0.00	\$12.00	(\$12.00)	\$0.00	(\$12.00)
2007	\$40.00	\$19.00	\$21.00	\$25.00	(\$4.00)
2008	\$87.00	\$25.00	\$62.00	\$40.00	\$22.00
2009	\$144.00	\$33.00	\$111.00	\$60.00	\$51.00
Aggregate Annual Total	\$40,000,000	\$14,300,000	\$25,700,000	\$18,500,000	\$7,200,000

* Enhanced case management, disease management, nurse advice line, MedQuery, and Aexcel network.

Table 16

Measurement and Performance Guarantees

Measurement Strategy

In order to evaluate the actual impact and effectiveness of these programs, the county needs to isolate the effectiveness of each program and its contribution toward overall cost trend reduction as well as quality of care. A research design is presently in development to permit analysis of both the pilot programs during 2005-2006 and for programs and vendors selected for the 2007-2009 benefits package.

Measurement and reporting can be broken down into three areas—on-going reporting of participation in specific programs, outcomes analysis for each specific program, and surveying of the effectiveness of the communication, education and health promotion activities in motivating participation in the *Healthy Incentives* programs. On-going reporting tracks program progress based on a synthesis of summary vendor reporting (monthly, quarterly, and/or annual reporting frequencies). It produces a high-level look at results. Measurement metrics include utilization, participation, satisfaction, risk scores/stratification, and others. There are some challenges in relying on this approach:

- Reports must be integrated from multiple vendors;
- Double counting can occur if separate vendors do not adjust for members participating in programs provided by other vendors; and
- Data is aggregate and summary only, not at the individual level.

Table 17 below contains examples of potential measurement metrics by program component:

Potential Measurement Elements by Program Component

Program	Participation	Utilization	Satisfaction	Risk Stratification
Case Management	% of members receiving outreach % of members opting out	Changes in inpatient hospital length of stay Changes in inpatient hospital admissions/1,000 Changes in cost per episode of treatment group by diagnosis code Vendor reported cost savings that are evaluated based on projected savings.	Member satisfaction surveys/exit interviews following intervention	Changes in risk score distributions (assumes CM vendor performs risk assignment based on claims data)
Disease Management	% of members receiving outreach % of members opting out	Changes in drug therapy adherence rates Changes in emergency room and hospital utilization for disease related emergent conditions Vendor reported cost savings that are evaluated based on projected savings.	Member satisfaction surveys/exit interviews following intervention	Changes in disease prevalence
Nurse Line	% of members utilizing nurse line	Changes in emergency room/urgent care utilization for conditions amenable to self-care Vendor reported cost savings that are evaluated based on projected savings.	Member satisfaction surveys/exit interviews following intervention	n/a
Care Consideration Program	Number of care considerations	Changes in errors of commission and omission Vendor reported cost savings that are evaluated based on projected savings.	Provider satisfaction with intervention	n/a
High Performance Network	% utilization of identified high performance providers	Vendor reported cost savings that are evaluated based on projected savings.	Member satisfaction with high performance network providers	n/a
Health risk assessment & targeted health behavior change	% of adult members completing health risk assessments % of eligible adult members participating in targeted health behavior change	Number of website hits Voluntary participation in targeted health behavior change programs	Member satisfaction surveys/exit interviews following intervention	Change in risk-acuity distribution
Communication and Education	Market Research approaches – changes over time in “Brand” awareness, intent to participate, product knowledge, etc.		Member surveys/focus groups to determine program satisfaction	n/a

Table 17

On-going analysis can be accomplished using population-level data – that is, data that does not build a record of each individual person’s participation in programs and/or the outcomes for that person.

To develop a more complete picture of program contribution to wellness and/or health care cost trend reduction, however, outcome analysis is necessary. Outcome analysis focuses on program impact and return-on-investment (ROI) at the individual level, and thus controls for double-counting associated with data from health management program vendors. Outcome analysis integrates all data in order to tie participation to claims costs for participants and non-participants, thus more clearly showing the relative effects of different programs on health service utilization. This approach requires individual level data that links participation with key outcomes, adjusting for demographic differences. Multivariate analysis is used to determine the unique contribution of program participation by controlling for other factors such as age, gender, health plan, and tenure.

Determining actual ROI for each program requires substantial data analysis, including:

- Developing a detailed categorization of participation;
- Identifying a set of episodes of care (*i.e.*, Episode Treatment Group) associated with a specific condition and measure the changes in the cost for these Episode Treatment Groups over time for program participants and non-participants with necessary adjustments to discount differences due to demographic factors (*e.g.* age, gender, tenure, health plan, *etc.*);
- Investigate specific utilization statistics within these Episode Treatment Groups to identify what types of services are changing over time; and
- Defining baseline and comparison groups.

An outcomes-oriented analysis methodology will require coordination with vendors, and may require maintenance of data by a third party to ensure compliance with HIPAA confidentiality restrictions on individual health information. Data on covered enrollees, including medical claims, prescriptions, lab test results, disease and case management interventions, health risk assessments, and targeted behavior change program participation would form the basis for outcome analysis.

Appendix A discusses additional issues that need to be addressed in determining the ROI on health and productivity programs in general, and disease management programs in particular.

Finally, the county will be conducting a series of surveys at critical points in the communication, education and health promotion activity plans to determine how well employees and their spouses/domestic partners know and understand the message at that point, whether they believe the message, and whether they are ready to act on it. Efforts will be made to identify and quantify how work place changes and the health promotion activities contribute to supporting changes to healthy behavior and participation in the *Healthy Incentives* program. The specific measurement points and survey methodology are still in development.

Performance Guarantees

Aetna has agreed to performance guarantees for the disease management and the MedQuery programs during the 2005—2006 pilot. For disease management, the guarantee is based on 10% reductions in acute inpatient bed days for participants in the program. If Aetna does not meet the guarantee, the program fees will be refunded on a sliding scale basis (e.g. <2% reduction = 100% of fees refunded, 2%-5% reduction = 75% of fees refunded, etc.) The county will be working with Aetna to improve the measurement methodology on the disease management program, because as currently proposed, it does not address mean regression issues (e.g. there's the possibility that participants would have experienced a 10% reduction in acute inpatient days in the absence of the disease management program because the high utilizers one year tend not to be the high utilizers in the subsequent year). A comparison to non-participants adjusted for differences in severity of illness might be a step in the right direction, but this will need to be negotiated with Aetna and will also depend on the type of reporting they are able to provide.

On the MedQuery program, Aetna has guaranteed an ROI of 2 to 1. Savings will be estimated using Aetna's Health Economic Model. This model estimates the cost of avoided adverse events (e.g. probability of a stroke is reduced for an individual that adheres to their warfarin (a type of blood thinner) prescription therapy. If the MedQuery program improves patient follow through on the physician's recommended treatment, the savings is equal to the reduced probability of stroke multiplied by the estimated cost of a stroke, less the cost of the drug therapy).

Aetna has not provided guarantees for the other programs, because these are all new programs with less than two years of experience. Aetna has provided estimates of savings for all programs, which have been factored into the analysis. There is always a difference between what a carrier actually estimates for savings and what they will guarantee. As such, the county will not rely purely on Aetna's guarantee success/failure to determine the success of the programs. The county will need to design a measurement program that looks at a number of factors. In addition to the Aetna reports on performance guarantees, the county will need to focus on hospital, emergency room visits, and office visit utilization rates (and associated cost/severity), program participation, nurse line utilization statistics, etc. Unfortunately, it is very difficult to measure "success" because there are so many factors that drive health care cost year-to-year. However, if the county brings together enough directional evidence, it will be able to estimate the level of success of the programs.

The county will include a performance guarantees in the request for proposals and resulting vendor contracts for the 2007 – 2009 benefits programs.

Caveats for Success

As a part of the Health and Productivity Analysis Mercer completed for the county, Mercer made a number of recommendations for ensuring that health promotion programs actually

deliver both cost savings and healthier, more productive employees. These recommendations include:

- Base programs on data—know what is driving costs and what will produce the desired results;
- Secure senior management support—commitment to employee health as an asset to business success;
- Integrate all health-related programs—health and productivity management is one component of the overall health care strategy;
- Use quality vendors—partner with proven, best practice vendors that offer programs in target need areas;
- Establish favorable vendor contracts—define clear scope of services, performance metrics, competitive fees, client-specific reporting and guarantees;
- Implement strong communications and branding—ensure employees know about and use the programs;
- Align strategy with incentives—use financial or non-financial encouragement to drive desired behaviors; and
- Commit to on-going evaluation—use proven methodologies and objective, third-party validation of results.

As noted in the HAT Force reports adopted by Council Motions 11890 and 12023, there are three components critical to the success of the *Healthy Incentives* approach beyond the actual programs. They are 1) building a strong organizational alignment with health promotion in the workplace, 2) developing and sustaining an active, well-executed communication program aimed at both employees and their spouses/domestic partners, and 3) implementing a user-friendly web portal for delivering health education and tools to the home and simplifying enrollment in programs and benefits.

Organization alignment means providing constant and visible support for healthy behaviors in the workplace. It starts with senior management commitment to employee health as an asset to business success, and reaches out to every employee. It requires the county to remove obstacles and correct conditions that hinder health—not just physical conditions but also work rules and social systems that contribute to unnecessary stress, an unhealthy imbalance of work and family life, and avoidable tension and conflict at work. It means overcoming employee fears and cynicism that health promotion is just a passing interest.^{12 13}
¹⁴ It also means supporting employees who are working on their targeted health behavior changes by sponsoring activities that are consistent with this behavior change. This could include things like providing healthier snacks in vending machines, allowing weight management classes such as “Weight Watchers” in county worksites, creating maps of

¹² Chapman, L., (2002) *Planning Wellness: Getting Off to a Good Start*, Summex Corporation, Seattle, WA, p. 153.

¹³ Goetzel, R.Z., Guindon, A., Humphries, L., Newton, P., Turshen, J., and Webb, R., *Health and Productivity Management: Consortium Benchmarking Study Best Practice Report*, American Productivity and Quality Center International Benchmarking Clearinghouse, Houston, TX, July, 1998 available through www.apqc.org

¹⁴ Lowe, G, PhD, *Healthy Workplace Strategies: Creating Change and Achieving Results*, Workplace Health Strategies Bureau, Health Canada, p. 11

walking routes near county facilities, sponsoring noontime or before/after work walking clubs, and offering smoking cessation classes.

Major employers are increasingly recognizing the value of integrated health promotion programs in reducing their employee health care costs. For example, Caterpillar implemented its Healthy BalanceSM program over a three-year period to incorporate best practice features found in health promotion literature. Twenty one companies with outstanding health promotion programs were benchmarked. The Healthy BalanceSM is based on top-down management “buy-in” and involvement, strong incentives for both employee and spouse participation, and continuous evaluation and improvement.

Northeast Utilities has implemented its WellAware program. Like the program at Caterpillar, key features of the WellAware program include financial incentives for participation, the program is available to employees and spouses, and there is strong senior management support and on-going evaluation and re-design.

Pitney Bowes has a well-established reputation for valuing and investing in the well being of its employees. Pitney Bowes Power of 2 initiative is a multi-dimensional, highly integrated health care and welfare benefit strategy that uses data to drive program evolution and improvement. The central theme of Power of 2 is the shared responsibility and commitment from the employee and Pitney Bowes to work together for improved health and well-being. The ultimate goal of the program is to optimize organizational and employee health and productivity. Program objectives include enhancing health and productivity outcomes, managing health care cost to 0%, avoiding shifting costs to employees and rewarding healthy behaviors, enhancing benefits, and measuring results to quantify impact and to improve the program.

Other employers regularly cited in the literature as having strong worksite health promotion and disease management programs that save money in health care expenses and produce positive ROI include Johnson & Johnson, Citibank, Procter and Gamble, Chevron, California Public Retirement System, Bank of America, and Dupont.

The communication strategy must drive home to employees and their spouses/domestic partners the very real and personal effect the health care crisis has on their benefits, and provide them resources and tools to understand the options they have to help control both cost and quality by taking charge of their personal health behaviors. The council recognized this need when they approved the Benefits Labor-Management Collaboration project in the 2004 and 2005 budgets. That project is slated to run through 2007. The employee survey and focus groups, and the health and productivity study conducted in 2004 were products of Labor-Management Collaboration project. Using the information developed in those two studies, the county has developed a four-year education/communication plan and hired a team of health education/communication specialists known as the “Health Matters Partners.” Key objectives of the *Healthy Incentives* program communication strategy are:

- Ensure that union members, other employees and spouses/domestic partners understand the current financial issues in the county and support the efforts to provide quality, affordable health care programs;
- Help everyone at all levels in the organization to have a common understanding of the rationale for change, the destinations, and the steps required to get there;
- Empower employees by asking them to be a part of the solution and showing them why it is in their best interest to control cost increases;
- Mitigate drops in productivity and retention that result from employee dissention, anxiety and misunderstanding;
- Keep information and innovative ideas flowing in all directions; and
- Develop actual tools to support health and care decision making.

Finally, in order to be successful, the communication strategy must reach into the employee's homes through written materials and secure, confidential on-line access to information, programs, tools and resources. Enrollment in programs and benefits plans must be simple and easy in order to encourage maximum participation. The more tailored information and access is for each employee and spouse/domestic partner, the greater the likelihood they will opt into the programs. The Benefit Health Information Project (BHIP) business case outlines in detail a strategy for developing a web portal and enrollment system that will appropriately support the *Healthy Incentives* program.

Failure to achieve organizational alignment with health promotion in the workplace and/or strong communication outreach to employees and their families will undermine the effectiveness of the *Healthy Incentives* program in reaching the target reduction in cost trend.

Appendix A

Issues in Measuring ROI for Disease Management

There have been a number of studies documenting the clinical benefits of disease management programs in mitigating the effects of chronic diseases resulting in improved outcomes for the patient. Less clear, however, has been whether those programs also reduce overall costs. In fact, in 2002, in testimony before the Senate, the Director of the Congressional Budget Office stated that “it is not yet clear whether [disease management] programs can ... produce long term cost savings.”¹⁵ The study conducted by the Congressional Budget Office reviewed literature from studies completed between 1988 and 1999. Many of those studies were of short duration – one to two years—and many lacked the rigor of good research design. The two major pitfalls in calculating an accurate return on investment (ROI) are regression to the mean and selection bias.¹⁶

Regression to the mean occurs when, for example, a disease management program enrolls patients who had a particularly high utilization of health care services during the year before the start of the disease management program. These patient’s costs would be expected to fall – to regress to the mean—in subsequent periods, regardless of whether the patients had participated in a disease management program. Failure to control for regression to the mean will overstate the effects of a disease management program.

Selection bias refers to measuring costs and outcomes for disease management participants only, excluding those not enrolled in the program who have the same chronic conditions. The cost savings are inflated because the participants are more inclined to improve their health than non-participants. ROI can be inflated in disease management programs that only enroll the highest risk/sickest individuals.

The only way for payers to make sure they are getting their money’s worth and for disease management to really take hold is to be able to develop standards for measuring the outcomes—improved health status, improved patient and physician satisfaction and reduced costs. In 2001, The National Committee for Quality Assurance released a set of standards for accreditation and certification for disease management programs. These standards provide much-needed validation of the design and delivery of disease management programs. Health plans now have an unbiased, third-party confirmation of which disease management programs are evidence-based, effective and responsive to the needs of members and physician. Accreditation organizations do not, however, evaluate program outcomes.

It is clearly in the best interests of both disease management programs and the health care system to be able to cite credible, measurable and independently verified results from their effort. Plenty of studies exist that show the efficacy of disease management programs.

¹⁵ Statement of Dan L. Crippen, Director of the Congressional Budget Office, “Disease Management in Medicare: Data Analysis and Benefit Design Issues,” before the Special Committee on Aging United States Senate, September 19, 2002.

¹⁶ See discussion of “Return on Investment (ROI) in Disease Management”, In Focus, Fourth Quarter 2003

However, they are often based on different sets of statistics, or use different methodologies, which makes them less than useful for universal comparison.¹⁷

The Disease Management Association of America is attempting to address this issue by assuming leadership in the creation of industry-wide standards for disease management programs.

¹⁷ Robert E. Stone, "Outcomes-Driven Health Care Delivery: When Better Health Does Not Equal Higher Costs", Atlantic Information Services, 2002.

Summary of References on Disease Management Programs

Title	Author(s)	Synopsis	Results
"The Cost Savings of Disease Management Programs: Report on a Study of Health Plans"	American Association of Health Plans/Health Insurance Association of America,	Summarizes results of a survey on reducing health care costs of 25 disease management programs for highly prevalent conditions such as asthma, diabetes and congestive heart failure, across 10 health plans.	<p>Key Findings:</p> <ul style="list-style-type: none"> ▪ <i>Asthma</i>—pharmacy costs for patients with asthma declined 4.5 times that of the rest of the plan population between 1996 and 2001; the ROI on the overall program was \$1.25 - \$1.40 for every \$1.00 spent. ▪ <i>Congestive heart failure</i>—reduced emergency room visits and inpatient admissions reduced by 33 percent. ▪ <i>Low back pain</i>—ROI of \$1.30 to \$1.50 for every \$1.00 invested. ▪ <i>Diabetes</i>—reduced per-member, per month costs for members with diabetes 33 percent over the control group; reduced inpatient days 6.9 percent; reduced inpatient costs by 14.4 percent; and reduced total costs by 6.4 percent in a one-year period. Total ROI was \$1.75 to \$2.00 for every \$1.00 spent. ▪ <i>Multiple chronic conditions</i>—two programs ROI of \$2.94 for every \$1.00 spent; and ROI of \$2.25 to \$2.50 for every \$1.00 spent
"Disease Management"	Institute of Health Care Costs and Solutions, Washington Business Group on Health	Comprehensive discussion of chronic diseases and how they can be managed in the workplace.	<p>Examples of ROI for disease management programs:</p> <ul style="list-style-type: none"> ▪ American Healthways: A combined diabetes and congestive heart failure program for 6,900 commercial and Medicare plan participants recognized a 21.9 percent reduction in total health care costs, a net savings of \$9 million in a one-year period, and an ROI of \$4.63 per member/per month.

Title	Author(s)	Synopsis	Results
			<ul style="list-style-type: none"> Studies involving three disease management programs showed an \$8.88 median ROI (range \$7.33 to \$10.38) for participant population of 176 to 1,671 individuals. (Association for Worksite Health Promotion's "Worksite Health"). When compared with other program types (<i>i.e.</i> health management and demand management), disease management programs provided the best ROIs. A study of the effects of telephonic disease management program for pregnant women diagnosed with 'preterm labor' concluded that the women in the program had better clinical outcomes than those in the control group at an average cost savings of \$14,459 per pregnancy.
"Return on Investment (ROI) in Disease Management"	International Foundation of Employee Benefit Plans	Summarizes the issues in measuring ROI on disease management programs.	
"How Time and Circumstance Changed Disease Management"	Interview with Robert Stone	Covers issues in effective disease management programs including definition for accreditation by the Department of Health and Human Services, and the National Committee for Quality Assurances	Notes that it is easier to measure the clinical data in a disease management programs than financial due to need to integrate utilization, administration, claims and eligibility data, which often exist in separate silos. There is also a need for claims run out to occur, so it will be 20 months before the first year financial results are known.
"Outcomes-Driven Health Care Delivery: When Better Health Does Not Equal Higher Costs"	Robert Stone	Outlines the essentials for a well-designed and implemented disease management program whose clinical and financial results can be documented.	<p>Cites 14% savings plus a significant jump in well-being for members enrolled in diabetes disease management program conducted by CIGNA in a plan covering over 600,000 members.</p> <p>Lists 4 points in the health care delivery system where improvements in process can lead to heightened</p>

Title	Author(s)	Synopsis	Results
			<p>patient health and diminished overall costs:</p> <ul style="list-style-type: none"> ▪ Administrative services, such a member enrollment and claims processing ▪ Network delivery, which include the provision of physicians and facilities to provide health care services to members ▪ Knowledge engine, or the transformation of data in information that can be used to improve care: and ▪ Total care support, which includes the complete spectrum of medical management interventions. <p>These 4 elements need to woven together into an integrated process to improve patient outcomes and drive costs down.</p>
<p>“Effectiveness of a Disease Management Program For Patients with Diabetes”</p>	<p>Victor G. Villagra Tamin Ahmed</p>	<p>Using quasi-experimental methods, this study analyzed the first-year results of a multi-state diabetes disease management programs (DDMP) sponsored by a national managed care organization.</p>	<p>Presence of the DDMP in any site was associated with significantly lower overall costs of care within one year; the most important source of savings was a 22—30 percent decrease in hospitalization.</p> <p>Pharmacy costs were higher in the DDMP in place since the program actively promoted the use of appropriate drugs and adherence to pharmacological regimens.</p> <p>Fewer outpatient visits when the program was in place.</p> <p>Diabetes-related HEDIS and non-HEDIS metrics improved when a DDMP was in place.</p>

Demonstration of ROI Associated with Comprehensive Health Promotion Programs

Summary of References

Title	Author(s)	Synopsis	Results
"Financial Impact of Health Promotion Programs: A Comprehensive Review of the Literature"	Steven G. Aldana, PhD	<p>Summarizes literature on the ability of health promotion programs to reduce employee-related health care expenditures and absenteeism.</p> <p>Included 72 peer-reviewed studies</p>	<p>Results consistently show that providing health promotion programs is associated with reduced level to health care expenditures.</p> <p>On average, health promotion programs produced cost savings of \$3.48 for every dollar spent on those programs; including effects of absenteeism increases the saving to \$4.30 for every dollar spent.</p>
"The Relationship Between Modifiable Health Risks and Group-level Health Care Expenditures"	David R. Anderson, PhD William Whitmer, MBA Ron Z. Goetzel, PhD Ronald J. Ozminkowski, PhD Jeffery Wasserman, PhD Seth Serxner, PhD, MPH Health Enhancement Research Organization (HERO) Research Committee	<p>Analyzes the impact of eleven risk factors in health promotion programs sponsored by six large public- and private-sector employers. The association between risks and expenditures was estimated using a two-part regression model, controlling for demographics and other confounders.</p>	<p>Risk factors were associated with 25% of total expenditures, leading to the conclusions that modifiable risk factors contribute substantially to overall health care expenditures. Health promotion programs that reduce these risks may be beneficial for employers in controlling health care costs.</p>
"Meta-Evaluation of Worksite Health Promotion Economic Return Studies"	Larry Chapman, MPH	<p>Performs a meta-evaluation of peer-reviewed literature concerning the economic impact of worksite health promotion programs.</p>	<p>Average ROI of 5.93 to 1 for the 42 studies evaluated (simple mean; average not weighted by sample size.)</p>

Title	Author(s)	Synopsis	Results
<p>"Preventive Care and Services in Workplace Health Plans: <i>Why Employers Are Making It Their Business</i></p>	<p>Ian Dixon Courtney Rees</p>	<p>Summarizes best practices for employers in designing and implementing comprehensive and useful preventive services programs.</p>	<p>Cites average results from employer plans, including:</p> <ul style="list-style-type: none"> ▪ 28% reduction in sick leave ▪ 26% reduction in direct health care costs ▪ 30% reduction in worker's compensation and disability costs ▪ Benefit-to-cost ratios of \$3.48 in reduced health care costs and \$5.82 in lower absenteeism cost per dollar invested in employee wellness programs ▪ More than 10,000 studies supporting the relationship between modifiable risk factors and resulting death and injury, suggesting that 50% to 75% of premature mortality and 50% of all morbidity in the US could be avoided or mitigated through prevention efforts
<p>"What's the ROI? A Systematic Review of the Return-on-Investment Studies of Corporate Health and Productivity Management Initiatives"</p>	<p>Ron Z. Goetzel, PhD Timothy R. Juday, MPA Ronald J. Ozminkowski, PhD</p>	<p>Summarizes the best available literature and documents the ROI associated with corporate health and productivity programs.</p>	<p>Median ROI was 3.14 to 1 for corporate health management programs (health promotion/disease prevention/wellness.)</p> <p>Median ROI was 4.50 to 1 for demand management programs (e.g. self-care resources, newsletters, nurse advice line,</p>

Title	Author(s)	Synopsis	Results
			<p>etc.)</p> <p>Median ROI was 8.88 to 1 for disease management programs.</p>
<p>“Long Term Impact of Johnson & Johnson’s Health & Wellness Program on Health Care Utilization and Expenditures”</p>	<p>Ronald Ozminkowski, PhD Davina Ling, PhD Ron Z. Goetzel, PhD Jennifer A. Bruno, B.S. Kathleen R. Rutter, B.A. Fikry Isaac, MD, MPH Sara Wang, PhD</p>	<p>Estimated long-term impacts of Johnson & Johnson’s Health & Wellness Program on medical care utilization and expenses.</p>	<p>Reduction in medical care expenditures of \$224.66 per employee per year over the first four years of the program, with most savings in years 3 and 4.</p> <p>Savings resulted from reduced inpatient utilization, fewer mental health visits, and fewer outpatient visits as compared to the baseline period.</p>
<p>“The Relationship Between Health Promotion Program Participation and Medical Costs: A Dose Response”</p>	<p>Seth Serxner, PhD, MPH Daniel B. Gold, PhD Jessica J. Grossmeier, MPH David R. Anderson, PhD</p>	<p>Explores the question, “Does participation in the health risk assessment (HRA) and intervention program components of a comprehensive health promotion programs have an impact on medical costs?”</p>	<p>Overall, HRA participants cost an average of \$212 less than eligible non-participants.</p> <p>As HRA participation increase cost savings also increased.</p> <p>Although participation in either an HRA or intervention activities alone resulted in savings, participation in both yielded even greater benefits.</p>